

PATENT SPECIFICATION



Application Date: May 2, 1925. No. 11,473 / 25.

248,591

Complete Accepted: March 11, 1926.

COMPLETE SPECIFICATION.

Improved Assembling Device for Loose Leaves, Papers and the like.

I, JAN HENDRIK REGENBOOG, of 24, Borneostraat, The Hague, The Netherlands, of Dutch nationality, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The present invention relates to an assembling device, more particularly to an assembling cover for loose leaves, papers and the like, and particularly for documents of importance such as diagrams, catalogue sheets, booklets, topographic cards and the like.

The invention has for its object to so construct the assembling device that it is possible to assemble the loose sheets or the like in piles of any suitable number, which sheets are easily individually removable, and without making use of the rather complicated wellknown lever mechanisms.

According to the invention the assembling device comprises a back portion, a plurality of parallel hinge pins or wires, and means for connecting the hinge pins to the said back portion, which means consists of hinges for receiving the pins constructed in such manner that a number of leaves or sheets may be arranged in succession along one hinge pin, each sheet having two opposed hinges, an upper and a lower.

The invention will be more fully understood by reference to the accompanying drawings illustrating it by way of example.

Fig. 1 is a perspective view of an assembling cover constructed in accordance with the invention and containing a number of sheets or the like.

Fig. 2 shows, on a larger scale, a hinge to which a portion of a sheet is attached, in perspective.

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Fig. 3 shows this hinge in an intermediate stage of manufacture.

In the drawings 1 and 2 are the leaves of a cover, the back portion of which is denoted by 3, and is provided with a stiffening mass 4, for instance a piece of wood attached to it by suitable pins or rivets. It is to be understood, that where there is reference in the following description and in the claims to a back portion, this expression covers an ordinary back portion of a cover provided with an interior strengthening mass or member. Secured to the back portion 3 and the portion 4 are two bent pieces of metal 5, preferably rod-shaped and passed with some clearance through holes 6 of a plurality of parallel strips 7, which may be of cardboard, to each of which in the embodiment shown, at the extremities are secured two hinges 8, receiving a hinge pin 9. These hinge pins are also parallel to each other and adapted to be shifted into and out of engagement with the hinges 8. The strips with hinges are adapted to be turned over as clearly shown on the drawing, which also shows how the pin 10 has been shifted out of engagement with the hinge 11. The sheets 12 are removably connected to the hinge pins 9, by means of special hinges 13 to be more fully described hereinafter. It will be clear from an examination of Fig. 1 that one hinge pin 9 may carry a plurality of hinges 13. It will also be clear that by shifting a hinge pin out of engagement with one of its hinges (e.g. the pin 10) the hinges 13 to which a sheet 12 is secured may be shifted off the pin 10 for the purpose of removing the sheet from the cover.

Each hinge 13 comprises a flexible portion and a relatively rigid portion, the latter forming the hinge proper, receiving

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the hinge pin. The flexible portion may consist of a strip 14 of a suitable fabric, the relatively rigid portion of a strip 15 of sheet metal. The strip of metal is provided with inwardly bent ends 16 (Fig. 3). Between these ends 16 and the intermediate portion of the strip of metal the strip 14 of fabric is clamped. The strip of metal and the strip of fabric shown in Fig. 3 are then bent at right angles to the direction of bending of the ends 16, in such manner that a tubular hinge portion 17 (Fig. 2), two parallel flat metal portions 18 and a fabric portion 19 above and below the sheet 20, are provided.

The attachment of the portions 19 to the sheet 20 may be effected by means of eyelets or by providing the fabric strip portions 19 at the inner side with a suitable adhesive.

I am aware that it has been proposed before in the manufacture of books, albums and portfolios for holding prints, photographs and the like, in which hinge pins or wires are used, co-operating with lugs or hinges attached to rigid members, to employ a stub hinged to or flexibly connected with the back or the covers, so that the sheets or the leaves can be turned over freely.

I am also aware that it has been proposed to connect the covers of a file or index together by means of double hinges consisting of lugs or eyes made in pairs upon the edges of the hinge plates or links which when placed together are held by means of removable hinge pins.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. An assembling device for loose leaves, papers and the like, comprising a back portion, a plurality of parallel hinge pins or wires, means for connecting the hinge pins to the said back portion, and means whereby a number of leaves of sheets are hinged to one pin or wire in succession along same, each leaf or sheet being hinged to the pin by a pair of opposed hinges.

2. An assembling device for loose leaves, papers and the like in accordance with Claim 1 comprising a back portion, a plurality of parallel hinge pins, a plurality of spaced hinges for receiving the hinge pins, and strips for connecting the hinges to the back portion, characterised by the fact that the hinge pins loosely engage their hinges and are adapted to be shifted in both directions into and out of engagement with their hinges, the hinges for each hinge pin being provided in opposed pairs, with means for attaching the strip to the back portion in such a manner that the strip is adapted to be turned over.

3. Assembling device for loose leaves, papers and the like, according to Claim 2, in which the hinges for connecting a part to be assembled to a hinge pin comprise a flexible portion receiving the part to be assembled, and a rigid portion forming the hinge proper.

4. Hinge for use with an assembling device according to Claims 1 or 2, comprising a relatively rigid portion forming the hinge proper, and a flexible portion for attachment to a leaf to be assembled.

5. Hinge according to Claims 1 and 4, in which the rigid portion consists of a strip of metal having inwardly bent ends, a strip of flexible material being clamped between that portion of the metal strip located intermediate the bent ends, the metal strip with bent ends and the clamped strip of flexible material being further bent so as to form a hinge portion adapted to receive a hinge pin and a flexible portion adapted to receive a leaf or part to be assembled.

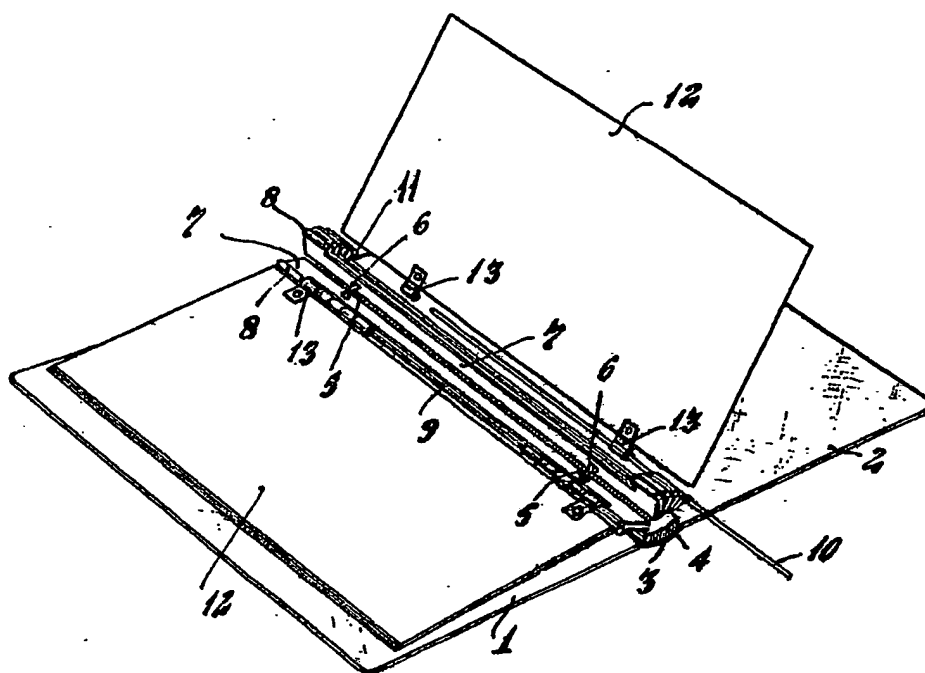
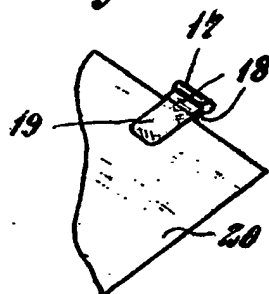
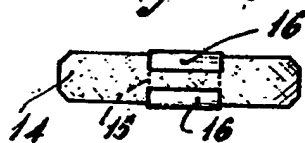
6. In loose leaf covers, a hinge according to Claim 2 or 5, in which the strip of foldable material is provided at one side with an adhesive.

7. Loose leaf binders constructed and adapted to operate substantially as described with reference to the drawings.

Dated this 2nd day of May, 1925.

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Fig. 1.*Fig. 2.**Fig. 3.*

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[This Drawing is a reproduction of the Original on a reduced scale.]